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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/883,842 | 06/18/2001 | Stanley Stein | 601-1-097 N | 9975 |

23280 7590 04/20/2005

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| EXAMINER | |
|---|---|
| FUBARA, BLESSING M | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1618 | |

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/883,842 | STEIN ET AL. | |
| | Examiner | Art Unit | |
| | Blessing M. Fubara | 1618 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *27 December 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,5-34 and 38-57* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 5-34 and 38-57* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

RD

## DETAILED ACTION

Examiner acknowledges receipt of change of power of attorney, amendment and remarks filed 12/27/04. Claims 1, 5-34, 38-51 and new claims 52-57 are pending. Applicants amended the claims to include the objected claims in the generic claims. No arguments were presented since Trinh does not disclose poly(alkylene oxide), carboxymethylcellulose, dextran, modified dextran, polyvinyl alcohol, N-(2-hydroxypropyl)methacrylamide, polyvinyl pyrrolidone, poly-1,3-dioxolane, poly-1,3,6-trioxane, polypropylene oxide, a copolymer of ethylene and maleic anhydride, a polylactide/polyglycolide copolymer, a polyaminoacid, a copolymer of poly(ethylene glycol) and an amino acid, and a polypropylene oxide/ethylene oxide copolymer. However, the rejection below is provided.

### *Claim Rejections - 35 USC § 102*

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. Claims 1, 5, 6, 13-19, 21, 25-30, 33, 38-40, 43-53, 55 and 56 are rejected under 35 U.S.C. 102(b) as being anticipated by Roos et al. (US 5,840,338).

Roos discloses polymer gel networks that are loaded with biologically active solutes (abstract). The biological agents that can be loaded in the polymer networks of Roos are listed in column 52, line 15 to column 56 line 18 and some of the specific examples are anti-depressants, muscle relaxants, opioids, anti-cancer agents, antibiotics, anti-viral agents, antihistamines, anti-aids substances and neurotransmitters. The polymers are selected from polyvinyl alcohol, dextran, polyvinylpyrrolidone, polyethylene oxide and polypropylene glycol and polyethylene glycol (column 13, lines 33-38) and the gel is a 3-D cross-linked polymer

network (column 13, lines 46-48; column). The polymer network of Roos can be an emulsion, draught, syrup, elixir or powder or granules or liposomes or capsules or cachets or tablets or lozenges (column 36, lines 10-15). The teaching of Roos meets the limitations of the claims.

2. Claims 1, 5-7, 9, 11-21, 23, 25-30, 33, 34, 38-40, 43-47, 49-53, 55 and 56 are rejected under 35 U.S.C. 102(b) as being anticipated by Grinstaff et al. (US 5,498,421).

Grinstaff provides compositions for in vivo delivery of solid or liquid active agents contained in cross-linked polymeric shells, through several routes of administration, including oral, subcutaneous, intraperitoneal and transdermal (column. 7, line 60 to col. 8, line 33). Grinstaff et al. includes linear and branched PEGS among the synthetic polymers used in the invention, and teaches that the active agent may be dispersed in oil and the polymeric shells containing the active agent may be suspended in an aqueous medium to form lipid-containing **emulsions** (column. 9, line 14 to column. 10, line 2). Grinstaff et al. teaches that the polymeric shell can be modified by forming a covalent bond with cross linked polymers, such as PEG derivatives, including PEG-thiols (col. 12, line 14 to col. 13, line 27). Grinstaff et al. teaches that the compositions of the invention are suitable for delayed or controlled release of an entrapped pharmaceutical agent (Example 5). Grinstaff discloses in column 9, lines 14-22, that "polyalkylene glycols (e.g., linear or branched chain), polyvinyl alcohol, polyhydroxyethyl methacrylate, polyacrylic acid, polyethyloxazoline, polyacrylamide, polyvinyl pyrrolidinone, and the like, are good candidates for chemical modification (to introduce sulfhydryl and/or disulfide linkages) and shell formation (by causing the cross linking thereof)." Biologic agents delivered by the system of Grinstaff are analgesic agents, anesthetic agents, anti-asthmatic agents, antibiotics, anti-depressant agents, anti-diabetic agents, anti-fungal agents, anti-hypertensive

agents, anti-inflammatory agents, anti-neoplastic agents, anxiolytic agents, enzymatically active agents, **nucleic acid** constructs, immunostimulating agents, immunosuppressive agents, physiologically active gases, vaccines, and the like, diagnostic agents (such as ultrasound contrast agents, radio-contrast agents, or magnetic contrast agents), and agents of nutritional value, and the like (column 8, lines 24-33). Grinstaff meets the limitations of the claims.

3. Claims 1, 38, 40 and 43-51 remain rejected under 35 U.S.C. 102(b) as being anticipated by Yanaki et al. (US 5,538,728).

Applicants traverse the rejection on the basis that claim 37 is cancelled and claim 1 contains the language of claim 4 and also that Yanaki does not disclose controlled release composition.

4. Applicants' arguments filed 12/27/04 have been fully considered but they are not persuasive.

Yanaki discloses the presence of cross-linked dextran and the excipient matrix governs control release.

***Claim Rejections - 35 USC § 103***

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roos et al. (US 5,840,338)

Roos is described above. Roos does is silent on the time course of the release of the drugs. However, the skilled artisan has the knowledge of determining desired time course of

release of the targeted drugs. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the delivery composition of Roos to deliver drug. One having ordinary skill in the art would be motivated to administer the composition with the expectation of having the dosage form would deliver the drug within certain prescribed time. There is no demonstration that delivery time course of five or more days or twenty or more days provides unexpected results.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1, 5-34 and 38-57 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 1, 19, 38, 54 and 57 recite polyaminoacid and the specification does not list any polyamino acid that may be useful in the invention. Lysine is recited in claim 10 and also disclosed in the specification. It would require an inordinate amount of time for the skilled artisan to test all polyamino acids and come up with the one(s) that would be applicable in the instant claims. No guidance is provided and there is no exemplification or list of polyaminoacids that are applicable for use in the invention.

9. **Question**: What polymer is formed from α,ω-dihydroxy-poly(ethylene glycol) or α, ω-diamino-poly(ethylene glycol) or a polymer that is the product of α,ω-dihydroxy-poly(ethylene

glycol) and thiomalic acid or and α, ω-diamino-poly(ethylene glycol) and thiomalic acid or α,ω-dicarboxy-PEG subunits and lysine? The specification has not disclosed the polymer.

The cited prior art does not disclose polyalkylene oxide derivative that is polymer that is α,ω-dihydroxy-poly(ethylene glycol) or α, ω-diamino-poly(ethylene glycol) or a polymer that is the product of α,ω-dihydroxy-poly(ethylene glycol) and thiomalic acid or and α, ω-diamino-poly(ethylene glycol) and thiomalic acid or α,ω- dicarboxy-PEG subunits and lysine, wherein free carboxy groups on said lysine are derivatized to provide thiol groups. The cited prior art does not disclose molecular oxygen or hydrogen peroxide, dimethylsulfoxide or molecular iodine as oxidizing agent.

**Request to add an inventor: The request to change the power of attorney is received and processed. However, the request to add an inventor is not yet part of the record as the record shows two inventors and the communication to add the inventor is not in the file. Applicants may resubmit the request.**

10. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicants' cooperation is requested in correcting any errors of which applicants may become aware in the specification.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blessing M. Fubara whose telephone number is (571) 272-0594. The examiner can normally be reached on 7 a.m. to 3:30 p.m. (Monday to Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman K. Page can be reached on (571) 272-0602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Blessing Fubara
Patent Examiner
Tech. Center 1600